IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

NAGY ET AL.

Serial No.: 08/872,659

Filed: June 10, 1997

For: TRANSITION METAL CATALYSTS CONTAINING BIDENTATE LIGANDS AND METHOD OF USING AND PREPARING SAME

Attorney Docket No.: 016199/1110

Group Art Unit: 1713

Examiner: Roberto Rabago

20/KB
11/1/00
1873

APPEAL BRIEF

Box AF
Commissioner for Patents
United States Patent and Trademark Office
Washington, D.C. 20231

Sir:

Appellants hereby appeal the rejection of claims made final in the rejection dated April 6, 2000. This brief is submitted in triplicate, and is accompanied by the 31 C.F.R. § 1.17(c) fee of $310.00.

I. REAL PARTY IN INTEREST

The real party in interest is Equistar Chemicals, L.P.

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

I hereby certify that this paper, including all enclosures referred to herein, is being deposited with the United States Postal Service as first-class mail, postage pre-paid, in an envelope addressed to: Box AF, Commissioner for Patents, United States Patent and Trademark Office, Washington, D.C. 20231 on:

October 10, 2000	William G. Conger	
Date of Deposit	Name of Person Signing	Signature

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Appellants appeal the rejection of all the claims, claims 22-35, 37-51 and 53-73. Originally pending claims 1-20 have been cancelled. Of the claims added by Preliminary Amendment, claims 21-70, claims 21, 36, and 52 were cancelled in favor of these claims being rewritten as claims 71, 72, and 73, respectively. Claims 71, 72 and 73 are believed to be the broadest claims.

IV. STATUS OF AMENDMENTS

No amendments were made after the final rejection.

V. SUMMARY OF THE INVENTION

The subject invention is directed to olefin polymerization catalysts containing pyridinoxy or quinolinoxy ligands bound to a transition metal of groups 3 to 10 (claim 1 as filed, specification pages 4-5). The claims are also directed to use of the catalysts in olefin polymerization (claim 15 as filed, specification page 7), preferably in combination with a co-catalyst (page 7).

VI. ISSUES

1. The issues may be succinctly stated as set forth below. The issues are directed to whether Reichle U.S. Patent 5,852,146 is prior art against the claims.

Issue A: Is Reichle U.S. Patent 5,582,146 (hereinafter, *"Reichle"*) entitled to its filing date of June 27, 1996 for purpose of use as a reference against a third party application?

Issue B: Is the Declaration of the inventors of the parent application Serial No. 08/423,232 together with the specification of that application, sufficient evidence of a constructive reduction to practice prior to the earliest filing date of *Reichle* sufficient to remove *Reichle* as a reference under 37 C.F.R. § 1.131?

VII. GROUPING OF CLAIMS

For the purposes of this appeal only, the claims stand or fall together.

VIII. ARGUMENT

Background

Appellants application "*Nagy II*" was filed June 10, 1997, claiming priority to U.S. application Serial No. 08/423,232 Filed April 17, 1995 ("*Nagy I*"). The present application's specification and claims are quite similar to those of the parent application, but contain broadened replacement groups for certain of the structural elements in the general structural formula of the claimed catalysts. The two applications thus have a genus/subgenus relationship. The Office has a repeatedly characterized these broadened replacement groups

as "obvious" in view of the now-issued parent application (U.S. 5,637,660 ("*Nagy I*"). Appellants had questioned this position of the Office as being without support, and therefore not presenting a *prima facie* case of obviousness. Appellants' position was that the "obviousness" was conclusory, and without support of evidence from the prior art. Appellants stated, in view of the absence of *prima facie* obviousness, that they had no duty of filing rebuttal evidence. See Appellants' response dated February 22, 1999, page 15, second full paragraph. However, to expedite prosecution, Appellants filed a Terminal Disclaimer, disclaiming the term of any patent to issue from the present application which would extend beyond the full term of U.S. Patent 5,637,660 (*Nagy I*).

In the same response, Appellants drew the Examiner's attention to *Reichle*, which had issued on December 22, 1998, some 18 months following the filing of the present application, but which was filed on June 27, 1996, less than one year prior to the present application' s filing date. Thus, *Reichle* is a reference, at most, only under 35 U.S.C. § 103(a) through 35 U.S.C. § 102(a) or 35 U.S.C. § 102(e). *Reichle* is not a 35 U.S.C. § 102(b) reference. However, Appellants believe that for purposes of prior art, *Reichle* is not entitled to the fling date of June 27, 1996, but is entitled only to the issue date of December 22, 1998. Appellants further believe that they have provided evidence to antedate *Reichle*, regardless of what date *Reichle* is entitled to.

Issue A:

Under U.S. patent law, a fiction has been created that a patent could theoretically issue on the same date of its application, and thus for prior art purposes, the filing date is the effective date of an issued U.S. patent as a reference. This is the so-called *Milburn-Bourneville* rule, since codified at U.S.C. § 102(e). The Supreme Court decision as well as the rule have been oft criticized, and both have been limited by further court decisions (i.e., *Hilmer*) or legislation (i.e., the recent amendment of 35 U.S.C. § 103(c)).

The *Milburn-Bourneville* rule and its codification, as stated, both rest on the supposition that an application (*Reichle*) could theoretically issue on the same day as it was filed. The *Reichle* application, however, could not have issued on this date; the fiction upon which the rule and statute rest is therefore non-existent; and *Reichle* thus cannot be accorded its filing date for prior art purposes.

Appellants' parent application was filed on April 17, 1995, more than one year prior to the *Reichle* application. The two applications have considerable overlap in their disclosures and examples. The examples of *Reichle* are indeed strikingly similar to those of the subject invention parent application. An overlap in the claims existed in *Reichle* as filed, as well. Thus, for *Reichle* to issue as filed, an interference would have had to have been declared and decided prior to issuance. Moreover, the inference could not have been declared until the pending claims in both applications were allowed. Unlike the *Milburn-Bourneville* case, where no third party application was involved, the *Reichle* application could not in fact have issued on its application date. Since the fiction created by the Supreme Court (same day issuance) does not apply, and since 35 U.S.C. § 102(e) was a codification of that fiction, *Reichle* cannot be prior art as of its filing date, but only as of its issue date. Note that the *Hilmer* case disposed of the broad language of *Milburn-Bourneville* quickly with respect to foreign priority, refusing to accord the benefit of a foreign filing date for prior art purposes. *Milburn-Bourneville* has also not been extended to other categories of prior art, for example to publications, which could theoretically be published on the date the publisher receives the manuscript. Thus, in the absence of the fiction which gave rise to the oft criticized rule, *Reichle*, for prior art purposes, is effective as prior art only as of its issue date.

Since *Reichle's* issue date is later than the subject application's (*Nagy II*) filing date, the rejection under 35 U.S.C. § 103(a) over *Reichle II* must be reversed for this reason.

Issue B:

The Office has stated on numerous occasions its belief that the additional disclosure and claimed subject matter of the present application is an obvious variation of that disclosed in *Nagy I*. Appellants have indicated that this statement was conclusory, and requested support for the contention. There is no question that there is a small but significant quantity of claimed subject matter not identically described in the parent application. Thus, Appellants may not be entitled to their parent application's filing date under 35 U.S.C. § 120.[1]

However, *Reichle*, if a prior art reference at all (see Issue A), can at best be effective only as of its filing date, June 27, 1996. Appellants conceived and reduced the invention to practice prior to that date, thus antedating *Reichle*.

Although it is usual to antedate a 35 U.S.C. § 102(a) or (e) reference through use of a Declaration under 37 C.F.R. § 1.131, the law appears clear that a prior application and its Declaration may be substituted for a Rule 131 Declaration in appropriate circumstances. The reduction to practice, in this case, is a constructive reduction to practice rather than an actual reduction to practice, and the dictates of 35 U.S.C. § 120 (claim to priority) do not apply. Rather, the law pertaining to Rule 131 Declarations applies.

In re Mulder, 219 U.S.P.Q. 189 (Fed. Cir. 1983) indicates that

> If entitlement to a foreign filing date can completely overcome a reference we see no reason why it cannot partially overcome a reference by providing the constructive reduction to practice element of proof required by Rule 1.131. (Emphasis added).

[1]Appellants have not chosen to make this an issue herein. Some cases would support entitlement to the filing date of the parent in later genus/earlier subgenus situations.

Mulder at 193. Thus, in *Mulder*, even a foreign filed application was sufficient to evidence a constructive reduction to practice and serve as evidence under 37 C.F.R. § 1.131. Thus, the Declaration submitted with the parent case, the subject matter of which is completely contained within the present application's disclosure, must be accepted as the equivalent, of and in lieu of, a formal Rule 131 Declaration.

It is well established that an affidavit under Rule 1.131 need not show a conception and reduction to practice of every species of the reference. The antedating evidence need only render the reference teachings obvious:

> Certainly appellants should not be required to submit facts under Rule 131 showing that they reduced to practice that which is obvious in addition to those facts offered as showing a completion of the invention, for the purposes of antedating a reference.

In re Hostettler, 148 U.S.P.Q. 514 (CCPA 1966). Accord, *In re Clarke*, 148 U.S.P.Q. 670 (CCPA 1966). Both these cases are more fully set forth in Applicants' prior response. Note *Clarke*, in particular:

> We believe the rule in *Stempel* supplements our decision in *In re Shokal, supra*, and that the rule for antedating references is not limited to fact situations where the inventor can show priority as to the *identical* compound described in the reference. It seems that in an appropriate case an applicant should not be prevented from obtaining a patent to an invention where a compound described in a reference would have been obvious to one of ordinary skill in the art in view of what the affiant proves was completed with respect to the invention prior to the effective date of the reference. This is particularly true where the inventor had already appreciated that the invention was generic in nature from the work on diverse species and was endeavoring

> to determine by exercise of reasonable diligence the precise scope of the invention.[2]

Clarke further states:

> It follows from the above views that antedating affidavits must contain facts showing a completion of "the invention" commensurate with the extent the invention is shown in the reference, whether or not it be a showing of the identical disclosure of the reference. In our view, where it can be concluded that facts, offered in a Rule 131 affidavit in support of a general allegation of conception and reduction to practice of the invention, would persuade one or ordinary skill in the art to a reasonable certainty that the applicant possessed *so much of the invention as to encompass the reference disclosure*, then that showing should be accepted as establishing prima facie a case of inventorship prior to the reference, sufficient for the purpose of overcoming the reference in an ex parte case.

Here, the Office has alleged that the present claims, which differ only in relatively minor respects from those of the *Nagy I* parent application, are obvious over *Reichle*. If this is *prima facie* correct, then the *Nagy* parent application is sufficient evidence under Rule 131 to antedate *Reichle* under the reasoning of *Hostettler*, *Clarke*, and similar cases. Moreover, the constructive reduction to practice shows as much as *Reichle* shows, if not more. There can be no question that the present invention's generic teachings were conceived and constructively reduced to practice prior to *Reichle's* filing date. This antedating of *Reichle* by the *Nagy* parent application as evidence under 37 C.F.R. § 1.131 is not dependent in any way, on the actual priority date accorded the instant claims. Even if the claims are entitled only to the CIP application's filing date, the antedating of *Reichle* is still effective under Rule 131 to

[2]Exactly the case here.

remove *Reichle* as a reference. Reversal of the rejection of the claims over *Reichle* is solicited.[3]

The present inventors filed their application 18 months prior to *Reichle's* issue date, completely unaware that the *Reichle* application existed. The *Nagy I* parent application had matured into the *Nagy I* patent during this time, also with no knowledge of the *Reichle* application. The *Nagy II* application is but a more generic version of the *Nagy I* invention. In the meantime, with knowledge of the *Nagy I* patent, *Reichle* amended his claims to eliminate all but bridged pyridinoxy or quinolinoxy ligands,[4] thus admitting that he is not the inventor of the non-bridged pyridinoxy- and quinolinoxy- containing catalysts of the subject invention. In view of the facts on the record, it would be manifestly unfair to refuse to grant the instant claims over *Reichle,* when Appellants show a clear prior constructive reduction to practice of an invention at least as broad as that which *Reichle* has chosen not to contest.

Reversal of the rejection over *Reichle* under 35 U.S.C. § 103(a) due to Appellants' earlier constructive reduction to practice is solicited.

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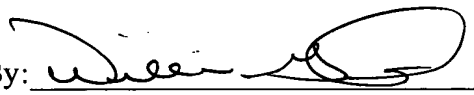
[3]For a further discussion of the breadth necessary of a Rule 131 Declaration, see Appellants prior response dated January 7, 2000 (Certificate of Mailing Date), beginning at page 2, third full paragraph, and extending to page 6.

[4]The present invention does not contemplate such bridged species.

The fee of $310.00 as applicable under the provisions of 37 C.F.R. § 1.17(c) is enclosed. Please charge any additional fee or credit any overpayment in connection with this filing to our Deposit Account No. 02-3978. A duplicate of this notice is enclosed for this purpose.

Respectfully submitted,

NAGY ET AL.

By: 

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Date: October 10, 2000

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IX. APPENDIX - CLAIMS ON APPEAL

22. The catalyst of claim 21, wherein the sum $a+b \leq 2$ when the oxidation state of M is 4 or less and $a+b \leq 3$ when the oxidation state of M is greater than 4.

23. The catalyst of claim 21, wherein Y is -O-.

24. The catalyst of claim 21, wherein X is halogen.

25. The catalyst of claim 21, wherein X is Cl.

26. The catalyst of claim 21, wherein M is a Group 3 to 7 metal.

27. The catalyst of claim 21, wherein M is a Group 4, 5, or 6 metal.

28. The catalyst of claim 21, wherein M is titanium, zirconium, or hafnium.

29. The catalyst of claim 23, wherein M is titanium, zirconium, or hafnium.

30. The catalyst of claim 25, wherein M is titanium, zirconium, or hafnium.

31. A catalyst composition useful for the polymerization of olefins, comprising a catalyst of claim 21 and an activating co-catalyst.

32. The catalyst composition of claim 31, wherein said co-catalyst comprises an alumoxane or an aluminum alkyl.

33. The catalyst composition of claim 32, wherein said alumoxane comprises (poly)methylalumoxane, ethylalumoxane, or diisobutylalumoxane.

34. The catalyst composition of claim 31, wherein said co-catalyst is an acid salt containing a non-coordinating inert anion.

35. The catalyst composition of claim 31, wherein said catalyst is a catalyst in which M is Ti, Zr, or Hf; X is halogen; and Y is oxygen.

37. The catalyst composition of claim 36, wherein Y is -O-.

38. The catalyst composition of claim 36, wherein X is halogen.

39. The catalyst composition of claim 36, wherein X is C1.

40. The catalyst composition of claim 36, wherein M is a Group 3 to 7 metal.

41. The catalyst composition of claim 36, wherein M is a Group 4, 5, or 6 metal.

42. The catalyst composition of claim 36, wherein M is titanium, zirconium, or hafnium.

43. The catalyst composition of claim 37, wherein M is titanium, zirconium, or hafnium.

44. The catalyst composition of claim 39, wherein M is titanium, zirconium, or hafnium.

45. The catalyst composition of claim 36, wherein M is Ti, Y is -O-, X is Cl, and L is C_{7-20} aralkyl.

46. The catalyst composition of claim 36, wherein said co-catalyst comprises an alumoxane or an aluminum alkyl.

47. The catalyst composition of claim 46, wherein said alumoxane comprises (poly)methylalumoxane, ethylalumoxane, or diisobutylalumoxane.

48. The catalyst composition of claim 36, wherein said co-catalyst is an acid salt containing a non-coordinating inert anion.

49. The catalyst composition of claim 36, wherein said catalyst is a catalyst in which M is Ti, Zr, or Hf; X is halogen; and Y is oxygen.

50. The catalyst composition of claim 45, wherein said co-catalyst comprises an alumoxane or an aluminum alkyl.

51. The catalyst composition of claim 45, wherein said co-catalyst is an acid salt containing a non-coordinating inert anion.

53. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst of claim 21.

54. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst of claim 23.

55. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst of claim 25.

56. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst of claim 27.

57. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst of claim 52.

58. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 31.

59. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 32.

60. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 33.

61. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 34.

62. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 35.

63. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 36.

64. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 37.

65. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 39.

66. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 41.

67. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 44.

68. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 45.

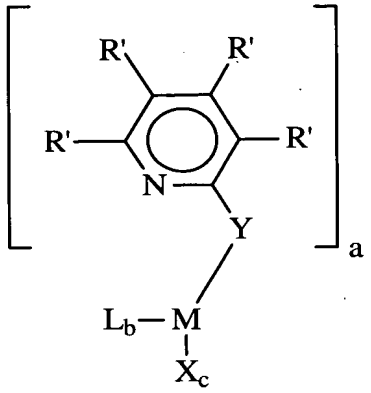
69. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 46.

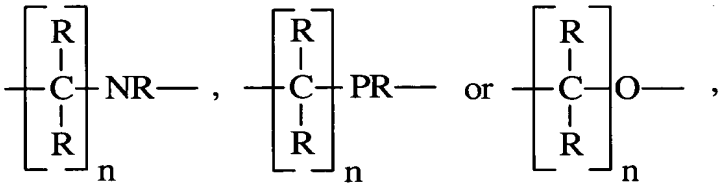
70. In a process for the polymerization of olefins in the presence of an olefin polymerization catalyst, the improvement comprising:

selecting as said olefin polymerization catalyst an olefin polymerization catalyst comprising the catalyst composition of claim 47.

71. A catalyst comprising units of the formula:



where Y is -O-, -S-,  , -P-,

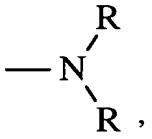


where each R is independently hydrogen, C_{1-6} alkyl, or C_{6-14} aryl;

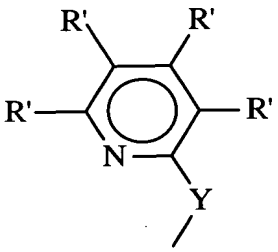
where each R' is independently R, C_{1-6} alkoxy, C_{7-20} alkaryl, C_{7-20} aralkyl, halogen, or CF_3;

where M is a Group 3 to 10 metal;

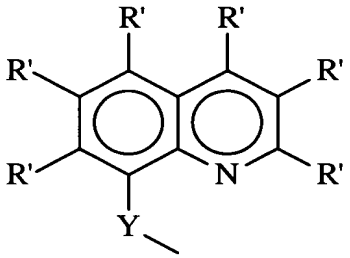
where each X is independently halogen, C_{1-6} alkyl, C_{6-14} aryl, C_{7-20} alkaryl, C_{7-20} aralkyl, C_{1-6} alkoxy, or



L is X, cyclopentadienyl, C_{1-6} alkyl-substituted cyclopentadienyl, fluorenyl, indenyl, or



or



where n is an integer from 1 to 4;

a is an integer from 1 to 3;

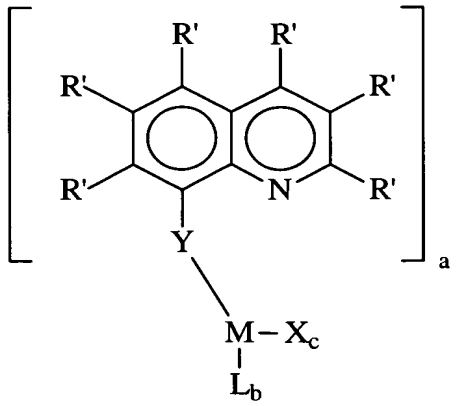
b is an integer from 0 to 2;

the sum of a+b≤3;

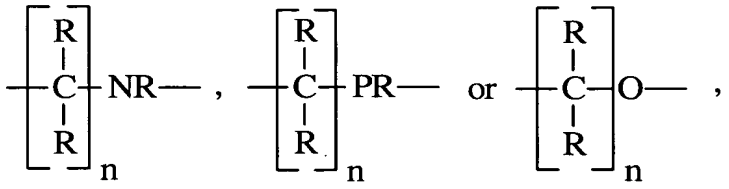
c is an integer from 1 to 6; and

the sum a+b+c equals the oxidation state of M.

72. A catalyst composition suitable for the polymerization of olefins, comprising an activating co-catalyst and a catalyst of the formula:



where Y is -O-, -S-,  , -P-,

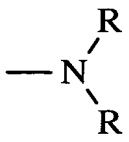


where each R is independently hydrogen, C_{1-6} alkyl, or C_{6-14} aryl;

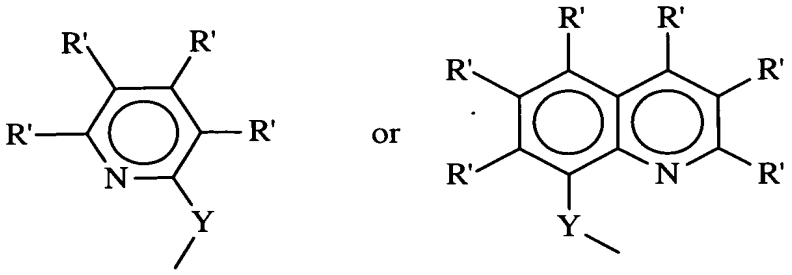
where each R' is independently R, C_{1-6} alkoxy, C_{7-20} alkaryl, C_{7-20} aralkyl, halogen, or CF_3;

where M is a Group 3 to 10 metal;

where each X is independently halogen, C_{1-6} alkyl, C_{6-14} aryl, C_{7-20} alkaryl, C_{7-20} aralkyl, C_{1-6} alkoxy, or



L is X, cyclopentadienyl, C_{1-6} alkyl-substituted cyclopentadienyl, fluorenyl, indenyl,



where n is an integer from 1 to 4;

a is an integer from 1 to 3;

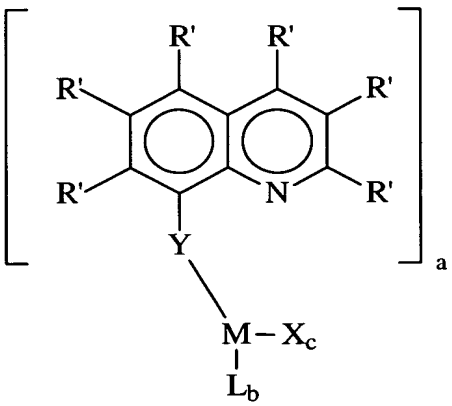
b is an integer from 0 to 2;

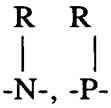
the sum of a+b≤3;

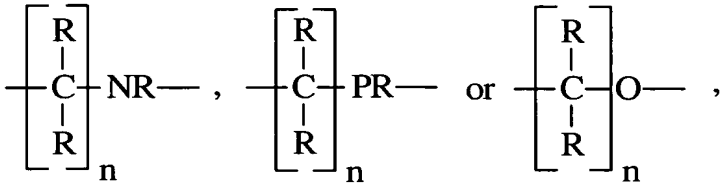
c is an integer from 1 to 6; and

the sum a+b+c equals the oxidation state of M.

73. A catalyst comprising units of the formula:



where Y is -O-, -S-,  , -P-,

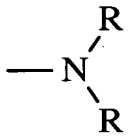


where each R is independently hydrogen, C_{1-6} alkyl, or C_{6-14} aryl;

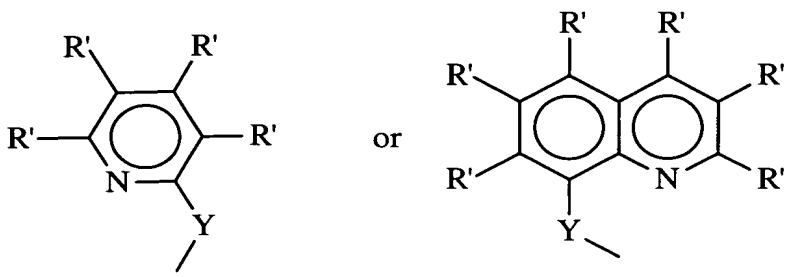
where each R' is independently R, C_{1-6} alkoxy, C_{7-20} alkaryl, C_{7-20} aralkyl, halogen, or CF_3;

where M is a Group 3 to 10 metal;

where each X is independently halogen, C_{1-6} alkyl, C_{6-14} aryl, C_{7-20} alkaryl, C_{7-20} aralkyl, C_{1-6} alkoxy, or



L is X, cyclopentadienyl, C_{1-6} alkyl-substituted cyclopentadienyl, fluorenyl, indenyl,



where n is an integer from 1 to 4;

a is an integer from 1 to 3;

b is an integer from 0 to 2;

the sum of $a+b \leq 3$;

c is an integer from 1 to 6; and

the sum $a+b+c$ equals the oxidation state of M.

with the proviso that trichlorotitanium 8-quinolinate, dichlorotitanium bis(8-quinolinate), and monochlorotitanium tris(8-quinolinate) are excluded.